



Natural Capital Accounting in Action

Australia's pilot ecosystem accounts benefit management of Great Barrier Reef

How do you manage an area as vast and complex as the Great Barrier Reef? Or any other landscape subject to different human pressures over time? The application of natural capital accounting and valuation methods to ecosystems and protected areas, currently being piloted in Australia, offers a useful framework to do this. It could provide systematic data, comparable over time, to improve the quality of decisions by protected area managers and political decision makers alike, in challenging development and climate change contexts.

The Australian Bureau of Statistics is piloting a set of ecosystem accounts for the Great Barrier Reef and its watershed. This work is testing the System of Environmental-Economic Accounting (SEEA) Experimental Ecosystem Accounting framework in a context that is rich in data and practical lessons for other countries. Australia's efforts represent a contribution to global knowledge in the field of natural capital accounting that holds particular promise for protected area management. The first set of accounts, to be published in April 2015, will be directly applicable to reef management.

A World Heritage Site, the reef is thought to provide a habitat for over 1,500 fish species, 133 varieties of sharks and rays, and

more than 30 species of whales and dolphins. It is a significant magnet for international tourism, contributing more than AUD5 billion to the Australian economy each year and generating about 68,000 jobs. However, the health of this global treasure is declining and reef managers have been searching for ways to establish data monitoring systems to enhance management effectiveness.

Assessing reef health, pressures and prospects

The reef has been the subject of a comprehensive strategic assessment and the Australian state and federal agencies are finalizing a plan to guide its management over the next 35 years. In addition, the Great Barrier Reef Marine Park

In brief

- Australia is piloting SEEA Experimental Ecosystem Accounting for the Great Barrier Reef and its watershed.
- Given that 1 million people live in the reef's watershed, and that the Great Barrier Reef Marine Park is about the size of Italy, it is important to define the accounting boundaries carefully and select indicators that matter most.
- The challenge of extreme weather connected to climate change gives extra impetus for rigorous management based on data presented systematically in ecosystem accounts

“Ecosystem accounting allows for a more targeted management response. If we can quantify the drivers of degradation and pressures as much as possible, then we prevent things from happening, minimize impacts or maximize benefits for the community.”

Margaret Gooch, manager of social and economic science, Great Barrier Reef Marine Park Authority



 Great Barrier Reef & Coral Sea, Australia. Flickr/WWF Deutschland

Authority is required by law to produce a five-yearly Outlook Report that assesses reef health, pressures and future prospects. This publishing cycle was one of the reasons Australian statisticians decided to pilot accounting in this area. “We chose to test the method in the Great Barrier Reef because we realized our work could feed into the Outlook Report process. We didn’t want to do great work that would not be used,” said John Power, who is leading the experimental ecosystems account work at the Australian Bureau of Statistics.

By presenting data related to biodiversity, land cover, water pollution, coral health, sea grass and other areas of interest in a systematic and comparable manner, ecosystem accounts can make clearer some of the connections between drivers of degradation, reef health and benefits derived from the reef.

In its Outlook Report, the Great Barrier Reef Marine Park Authority considers climate change as the primary long-term threat. Severe cyclones and watershed flooding (releasing large amounts of freshwater, which corals don’t like) have had a major impact on ecosystem health in the last 10 years.

“Because climate change is very hard to control, we have to make sure our overall management is as good as it can be to reduce impacts of climate change and extreme weather events,” says Margaret Gooch, the park authority’s manager of social and economic science.

Building resilience is important to the reef’s long-term future. All actions — big or small — to reduce threats and help restore the reef’s condition will improve its outlook.”

Value of reef-based industry and costs of human impact

The accounts provide a snapshot of the economic value of some reef-based industries but also estimate costs associated with human impacts.

Although climate change represents the major long term threat, evidence shows that land-based runoff that is high in nitrogen and sedimentation has the most deleterious immediate effect on the reef. Being able to calculate costs to reef health associated with declining habitats and biodiversity would help managers make decisions about the acceptability of human activities. It would also provide guidance to industries and local communities when considering the economic viability of a range of activities, taking into account the true cost of each activity.

“We need thresholds and triggers for action to influence the stakeholders who have an effect on the reef,” said Russell Reichelt, Great Barrier Reef Marine Park Authority, during a panel discussion on reconciling conservation and development at the World Parks Congress in Sydney in November 2014. Reichelt described efforts to partner with farmers to improve farming practices affecting the ocean downstream.

What is natural capital accounting?

A set of objective data showing how natural resources contribute to the economy and how the economy affects natural resources. The accounts are an extension of the System of National Accounts. Natural capital accounting integrates natural resources and economic analysis, providing a broader picture of development progress than standard measures such as GDP.



 Further resources can be found at www.wavespartnership.org

Facilitated by the World Bank, **Wealth Accounting and the Valuation of Ecosystem Services** is a global partnership that aims to promote sustainable development by ensuring that the national accounts used to measure and plan for economic growth include the value of natural resources



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